SWB C1

1. (Amended) An article of manufacture that can be exposed to a hot gas and including a metallic base body having a ceramic barrier coating bonded thereto, which has a spinel of the structural formula AB_2X_4, where

- X represents an element or several elements of the group comprising aluminum, sulfur, selenium, and tellurium,
- A represents an element or several elements of the group comprising aluminum, manganese, iron, cobalt, nickel, copper, zinc, cadmium, silicon, titanium and tungsten, and

B1

- B represents an element or several elements of the group comprising aluminum, magnesium, manganese, iron, vanadium, chromium, gallium, silicon, titanium sodium, and potassium

excluding the spinels of the structural formula $FeCr_2O_4$, $FeAl_2O_4$, $FeFe_2O_4$, $NiAl_2O_4$ and $NiCr_2O_4$.

2. (Amended) The article of manufacture as claimed in Claim 1, characterized in that B represents aluminum (aluminate spinel) or chromium (chromium spinel), A represents nickel, cobalt or titanium, and X represents oxygen.

3. (Amended) The article of manufacture as claimed in Claim 1, characterized in that B magnesium, A titanium, and X oxygen.

SWB C2

4. (Amended) An article of manufacture that can be exposed to a hot gas, and having a metallic base body with a ceramic barrier coating bonded thereto which has a spinel according to the structural formula AB_2X_4 characterized in that B represents aluminum (aluminate spinel) or chromium (chromium spinel), A represents magnesium, and X represents oxygen.

5. (Twice Amended) The article of manufacture as claimed in Claim 2, characterized in that the spinel is present as a mixture in the ternary system of the type AB_2X_4-AX-B_2X_3.

6. (Twice Amended) The article of manufacture as claimed in Claim 2, characterized in that the mixed oxide system with the spinel has an additional oxide or several additional oxides admixed to the spinel.

7. (Twice Amended) The article of manufacture as claimed in Claim 6, characterized in that the additional oxide is stabilized with yttrium oxide (Y_2O_3) or another rare earth oxide.

9. (Twice Amended) The article of manufacture as claimed in Claim 2, characterized in that between the base body and the thermal barrier coating a bond coat forming a bonding oxide is disposed.

10. (Amended) The article of manufacture as claimed in Claim 9, characterized in that the bond coat is any alloy comprising at least one of the elements of the spinel.

11. (Twice Amended) The article of manufacture as claimed in Claim 2, characterized in that the article is designed as a component of a thermal turbo machine, particularly a gas turbine.

12. (Amended) The article of manufacture as claimed in Claim 10, characterized in that the article is designed as a turbine moving blade, a turbine stationary blade or a heat shield of a combustion chamber.

13. (Twice Amended) The article of manufacture as claimed in Claim 2, characterized in that the thermal expansion coefficient α of the spinel is between $6*10^{-6}$/K and $17*10^{-6}$/K.

B7 CONT

14. (Twice Amended) The article of manufacture as claimed in Claim 2, characterized in that the thermal conductivity of the spinel is between 1.0 W/mK and 4.0 W/mK.

15. (Twice Amended) The article of manufacture as claimed in Claim 2, wherein the metallic base body has a superalloy comprising nickel, cobalt and/or chromium.

SWB CH

16. (Amended) A method of manufacturing a thermal barrier coating on a gas turbine component with a metallic base body, wherein a pre-reacted spinel of the structural formula AB_2X_4 excluding the spinels of the structural formula $FeCr_2O_4$, $FeAl_2O_4$, $FeFe_2O_4$, $NiAl_2O_4$ and $NiCr_2O_4$ is applied by means of plasma spraying or vapor deposition.

17. (Amended) The article of manufacture as claimed in Claim 1, characterized in that the spinel is present as a mixture in the ternary system of the type AB_2X_4-AX-B_2X_3.

B8 SWB CD

18. (Amended) The article of manufacture as claimed in Claim 1, characterized in that the mixed oxide system with the spinel has an additional oxide or several additional oxides admixed to the spinel.

19. (Amended) The article of manufacture as claimed in Claim 1, characterized in that between basic body and thermal barrier coating a bond coat forming a bonding oxide is disposed.

20. (Amended) The article of manufacture as claimed in Claim 2, characterized in that the thermal expansion coefficient α of the spinel is between $6*10^{-6}$/K and $17*10^{-6}$/K.

21. (Amended) The article of manufacture as claimed in Claim 2, characterized in that the thermal conductivity of the spinel is between 1.0 W/mK and 4.0 W/mK.

B9

22. (Amended) The article of manufacture as claimed in Claim 2, wherein the metallic base body has a superalloy comprising nickel, cobalt and/or chromium.